

538, 824

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
8 July 2004 (08.07.2004)

PCT

(10) International Publication Number  
**WO 2004/057632 A2**

(51) International Patent Classification<sup>7</sup>: **H01H**  
(21) International Application Number:  
PCT/US2003/040723  
(22) International Filing Date:  
19 December 2003 (19.12.2003)  
(25) Filing Language: English  
(26) Publication Language: English  
(30) Priority Data:  
60/434,893 19 December 2002 (19.12.2002) US  
(71) Applicant (for all designated States except US): **MTD PRODUCTS INC** [US/US]; 5965 Grafton Road, Valley City, OH 44280-9722 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

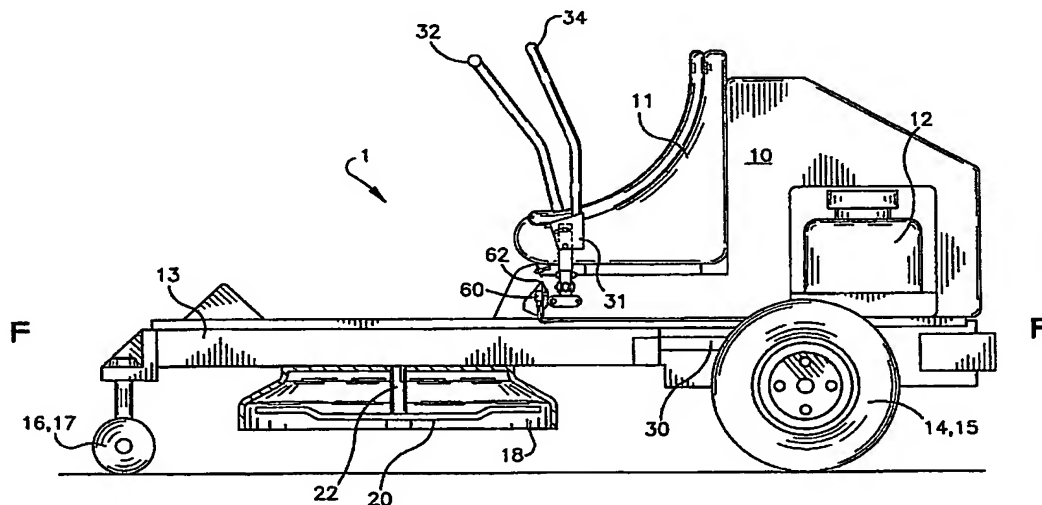
(72) Inventors; and  
(75) Inventors/Applicants (for US only): **PLAMPER, Guenter, F.** [US/US]; 3775 Weymouth Woods Drive, Medina, OH 44256 (US). **EAVENSON, Jimmy N., Sr.** [US/US]; 489 Wheatfield Drive, Aurora, OH 44202 (US).  
(74) Agents: **PEACOCK, Bruce, E. et al.**; Wegman, Hessler & Vanderburg, Suite 200, 6055 Rockside Woods Boulevard, Cleveland, OH 44131 (US).

**Published:**

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **MECHANISM FOR DISCONTINUING POWER TO AN IMPLEMENT DRIVE DURING MACHINE REVERSE TRAVEL (NO POWER IN REVERSE) WITH AUTOMATIC REENGAGEMENT**



(57) Abstract: An apparatus, systems and methods for automatically disengaging and re-engaging a cutting implement on a mowing machine by disconnecting and connecting, respectively, electrical power to an implement drive means. Power to the implement drive means is disconnected or connected according to gear positions of transmission control levers provided on the mowing machine. At designated gear positions, cut-out switches associated with the implement drive means are effective to interrupt power to the implement drive means. Repositioning the control levers to non-designated gear positions restores power to the implement drive means. The automatic disengagement/re-engagement of the cutting implement based on the gear position of transmission control levers may be used for two lever zero-turn-ride-on mowing machines or more traditional single lever ride-on mowing machines.

WO 2004/057632 A2